

Claims

1. A peptide including the amino acid sequence RPKHPIKHQG (SEQ ID NO:1), AVAVSQEAN (SEQ ID NO:2) or SEGVALDPAR (SEQ ID NO:3) or an analogue thereof.
2. A peptide as claimed in claim 1 wherein SEQ ID NO:1, 2 or 3 is the N-terminal sequence of the peptide.
3. A peptide as claimed in claim 1 or claim 2 wherein the peptide can be co-purified with each of the other peptides including the amino acid sequence shown in SEQ ID NO:1, SEQ ID NO:2 or SEQ ID NO:3 from a 6-30 kDa fraction of whey protein of cow's milk.
4. A peptide as claimed in any one of claims 1 to 3 wherein the peptide, in combination with one or other of the peptides including the amino acid sequence of SEQ ID NO:1, 2 or 3 reduces the level of milk production in a lactating cell.
5. A composition for influencing the rate of milk production by a lactating cell, the composition including a peptide including the sequence RPKHPIKHQG (SEQ ID NO:1) or an analogue thereof.

6. A composition for influencing the rate of milk production by a lactating cell, the composition including a peptide including the sequence AVAVSQEAN (SEQ ID NO:2) or an analogue thereof.
7. A composition for influencing the rate of milk production by a lactating cell, the composition including a peptide including the sequence SEGVALDPAR (SEQ ID NO:3) or an analogue thereof.
8. A composition for influencing the rate of milk production by a lactating cell, the composition including peptides including at least two of the sequences RPKHPIKHQG (SEQ ID NO:1), AVAVSQEAN (SEQ ID NO:2) or SEGVALDPAR (SEQ ID NO:3) or analogues thereof.
9. A method of influencing milk secretion in animals, the method including the steps of administering at least one peptide including the amino acid sequence RPKHPIKHQG (SEQ ID NO:1), AVAVSQEAN (SEQ ID NO:2) or SEGVALDPAR (SEQ ID NO:3) or an analogue thereof.
10. A method as claimed in claim 9 wherein the animal is selected from the group comprising a cow, goat and sheep.
11. A method as claimed in claim 9 wherein the animal is a human.

12. A method of modulating the milk secretion rate of a lactating cell, the method including the steps of;
- selecting a composition including at least one peptide including the amino acid sequence RPKHPIKHQG (SEQ ID NO:1), AVAVSQEAN (SEQ ID NO:2) or SEGVALDPAR (SEQ ID NO:3) or an analogue thereof,
 - administering the composition to the animal through the appropriate targeting of the mammary gland, and
 - exposing the cells of the mammary gland to a concentration of the composition sufficient to induce an inhibitory feedback mechanism which reduces lactation by the mammary gland cells.
13. A method as claimed in claim 12 wherein the composition is administered through intraductal administration.
14. A method as claimed in claim 12 wherein the delivery of the composition is by means of a bolus of peptide which is preferably encapsulated.
15. A method as claimed in claim 14 wherein the encapsulation material is an oil such as mineral oil.
16. A method as claimed in any one of claims 12 to 15 wherein the composition is

administered at a dose yielding a final concentration of peptides in milk in the range 0.01-1.6 micromolar.

17. The use of at least one peptide including the amino acid sequence RPKHPIKHQG (SEQ ID NO:1), AVAVSQEAN (SEQ ID NO:2) or SEGVALDPAR (SEQ ID NO:3) or an analogue thereof in the preparation of a composition for the modulation of lactation in a lactating cell of an animal.
18. A method of treating mastitis, the method including the step of administering a therapeutically useful amount of a at least one peptide including the amino acid sequence RPKHPIKHQG (SEQ ID NO:1), AVAVSQEAN (SEQ ID NO:2) or SEGVALDPAR (SEQ ID NO:3) or an analogue thereof.
19. A composition for influencing lactation in animals, the composition including a peptide including the amino acid sequence RPKHPIKHQG (SEQ ID NO: 1), AVAVSQEAN (SEQ ID NO:2) or SEGVALDPAR (SEQ ID NO:3) or an analogue thereof.
20. A composition as claimed in claim 19 wherein the animal is a non-human animal.
21. A composition as claimed in claim 19 wherein the animal is a cow, goat or sheep.

22. An antibody which specifically binds a peptide including the amino acid sequence shown in SEQ ID NO:1, SEQ ID NO:2 or SEQ ID NO:3 or analogues thereof.
23. An antibody which specifically binds a peptide consisting of the amino acid sequence shown in SEQ ID NO:1, SEQ ID NO:2 or SEQ ID NO:3 or analogues thereof.
24. Use of peptides including the amino acid sequence shown in SEQ ID NO:1, SEQ ID NO:2 or SEQ ID NO:3 or analogues thereof in the preparation of a medicament for the treatment of mastitis.